DOCUMENT RESUME

ED 466 223 IR 021 294

AUTHOR	Taylor, Jason; Wood, Jane; Robertshaw, Simon
TITLE	Case Study: The Translation of Archive Materials into an Interactive Medium.
PUB DATE	2001-00-00
NOTE	7p.; In: ED-Media 2001 World Conference on Educational Multimedia, Hypermedia & Telecommunications. Proceedings (13th, Tampere, Finland, June 25-30, 2001); see IR 021 194.
AVAILABLE FROM	Association for the Advancement of Computing in Education (AACE), P.O. Box 2966, Charlottesville, VA 22902 ($40 ,AACE members; $50, nonmembers). Tel: 804-973-3987; Fax: 804-978-7449; Web site: http://www.aace.org.
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Archives; *Computer Software Development; Foreign Countries; Information Technology; Material Development; *Multimedia Materials; Museums; *Optical Data Disks
IDENTIFIERS	*Digital Technology; Europe

ABSTRACT

This paper documents and explores the methodology employed by the developers of the Euro.Network.Hats project--a CD-ROM and Web site exploring the hatting and millinery industry in Europe, particularly the development and decline of European felt hat manufacture. The Stockport Hat Museum approached the International Center for Digital Content (ICDC) with certain key prerequisites. The CD-ROM was to explore the hatting and millinery industry in Europe using content supplied by the European partners. The content had to be equally accessible in four languages (English, French, Dutch, and German) and to three distinct user groups (researchers, school child, and casual browser). An insight is provided into an approach to the translation of diverse archive materials into an interactive digital format. The paper illustrates the process of content development: from the elicitation of content knowledge to the developer's response in terms of information design, visual, and interaction design. The four types of interactive available from the interface are described: content navigation, interface control, context, and the content itself. (AEF)

Reproductions supplied by EDRS are the best that can be made
from the original document.

Case Study: The Translation of Archive Materials into an Interactive Medium

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

G.H. Marks

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Jason Taylor, Jane Wood, Simon Robertshaw
International Centre for Digital Content
Liverpool John Moores University
United Kingdom
www.icdc.org.uk

j.taylor@livjm.ac.uk, j.wood@livjm.ac.uk, s.robertshaw@livjm.ac.uk

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Abstract: This paper documents and explores the methodology employed by the developers of the Euro.Network.Hats project - a CD-ROM and web site exploring the hatting and millinery industry in Europe, particularly the development and decline of European felt hat manufacture. It will provide an insight into an approach to the translation of diverse archive materials into an interactive digital format. The paper will illustrate the process of content development: from the elicitation of content knowledge to the developer's response in terms of information, visual and interaction design.

ED 466 223

Introduction

Stockport Hat Museum initially approached the Learning Methods Unit (now a core element of the International Centre for Digital Content) in 1998 with regard to the development of multimedia materials for their new museum site. The success of this relationship led the Museum to approach the ICDC for support on a bid for transnational funding under the European Community's Raphael programme.

> *The aim of this programme is to encourage co-operation between the Member States in the area of cultural heritage with a European dimension. It is intended to support and complement Member States' action aimed at representing national culture, highlighting the shared cultural heritage while respecting national and regional diversity. This action seeks to encourage operations to promote European cultural heritage, especially through new information technology and multilingualism.*

The bid was successful and funding amounting to 144.328 EUR was awarded in September 1999, the project being scheduled to run from September 1999 to September 2001. The ICDC acts as technology partner for the project, which will explore the hatting and millinery industry in Europe and maximise public access to a significant aspect of social and industrial heritage. The final product will be an interactive CD-ROM, available in English, French, Dutch and German, exploring the hatting and millinery industry in at least three European countries.

The Project

The Museum came to the ICDC with certain key pre-requisites. The product was to explore the hatting and millinery industry in Europe using content supplied by the European partners. The content had to be equally accessible in four languages (English, French, Dutch and German) and to three distinct user groups (researcher, school child and casual browser).

The Players

There are three major stakeholders in this production: the content specialist (the Museum), the developer (ICDC) and the user.

The lead partner in this project is the Stockport Hat Museum; they represent the bid partners: Museé du Chapeau, France and Historisch Museum, Netherlands. Together they are the content specialists. They hold a wealth of information about the hatting and millinery industry. However they lack knowledge of the creative technology they wish to be developed. They are unlikely to be aware of the potential of specific content.

IR021294

BEST COPY AVAILABLE

The ICDC developers have a good understanding of the management of rich information and its presentation in an interactive fashion but nothing beyond surface knowledge of the subject matter to be presented.

In any multimedia production it is the user who is the ultimate arbiter of quality, not the developer or the content specialist. Therefore an awareness of the needs of the user are crucial to the development of coherent and usable content. We anticipate that each type of user will have a variety of different needs.

The researcher has prior knowledge of the subject - we assume that they will approach the product searching for particular information rather than casual browsing. The child will have a range of needs too. Activities within the CD-ROM may need to be classroom focused (whether teacher guided or self-directed study or just fun). It is understood that the gatekeepers (teachers, parents) needs must be acknowledged in responding to the child's needs. We anticipate that the general browser has a level of curiosity about the content and therefore needs an environment that is easy to explore.

The Process of Content Development

In attempting to present complex information it is crucial that the presenter is knowledgeable in their field. When the medium is written this shouldn't be a problem - here the author has complete control over the means of communicating their ideas. The intent of the author is only impeded by their ability to express their ideas. Interactive forms however demand a different process. Two distinct roles emerge: content specialist and multimedia producer. Here, author and means of communication are divorced. If the information to be conveyed is to retain its original quality and meaning, great care must be taken. The content specialist and multimedia producer must work together to share their knowledge. Either working alone will dilute their skills and therefore the end product.

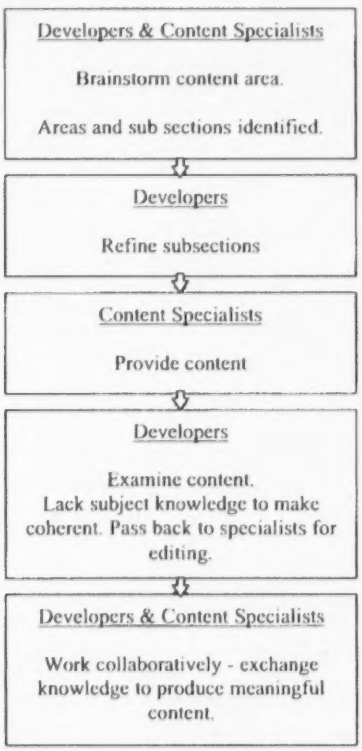

Figure 1. Content Development Process

Knowledge Elicitation

The model above (figure 1) represents the content development process. This process is iterative and continues throughout the development of the project. The content specialists hold the knowledge within their own context; this knowledge needs to be extracted. Here the need is to break down the knowledge accumulated by the content specialist into distinct areas to aid understanding first for the developer and then for the user.

To start this process several brainstorms were needed to break down the large content area into definite themes. It became clear that the content area to be included was extensive and the relationship between themes was complex.

There seemed no natural order or hierarchy of information. Sub sections of the six areas identified overlapped resulting in potentially confusing or unnecessarily duplicated information.

Having a greater understanding of navigational structures and the structure/editing of content for a multimedia context, the developers independently refined and removed sections to make the content more coherent and manageable.

Even with further refinement it was difficult to find a clear organisation of information that would not artificially compartmentalise the content. However, we recognise that a fragmented body of information need not be a divided one. There is a balance between chunking information for easy explanation and retaining the mosaic of information. We came to understand that the structure of the information was largely arbitrary. The way in which we made the content accessible would be crucial.

Information Design

Any structuring of information is artificial - information has no natural underlying order. But by categorising content we transform data to information - by supplying a context within which the content can be accessed we give the user a greater chance of assimilating the information into knowledge.

After establishing the content areas we went on to develop a metaphor to represent the content. It was clear that the holistic nature of the information couldn't and shouldn't be avoided - it should instead be embraced. The metaphor provides a map of the interactive environment. Information exists within the information space of the model - altering the position of a point on any axis allows a meaningful movement between content areas. Using this metaphor allows you to see the development of certain processes over several hundred years. It allows you to see these processes as they differ between country and also allows you experience other categories of information from the same time and place.

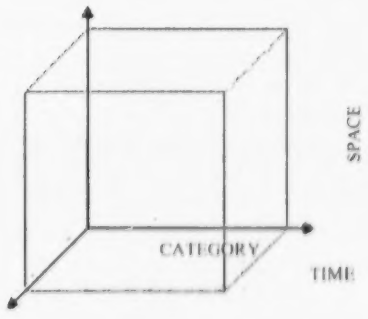

Figure 2. Content Metaphor

Structuring information by time, location and category allows us to separate the information into bite size chunks. As we are dealing with historical information largely provided by a museum, each photo, artifact etc. already has a date and geographical location associated with it. In addition, the categories defined in collaboration with the Museum staff provide the final element of the metaphor. This model allows for an easily understood and accessible division of content areas i.e. 1850, France, Architecture. It should be noted that all content is to be available in four languages (English, French, Dutch and German). This adds a fourth dimension to the model where any content can instantly be viewed in another language.

The model was developed before we had access to the content. It was an abstract approach to content about to be delivered. Resources were provided as a mass of information (text, image, and video) and it soon became apparent that the materials supplied were much too dense for easy assimilation by the developers. The developers had a basic understanding of the content, which was insufficient to develop the rich, coherent content required for the CD-ROM. At this point the developers decided upon the range of content to be covered in the CD-ROM. This made it clear that the content specialists had to edit the content to match these requirements. The developers and content specialists later met to collaborate in the gathering and formulation of resources. This enabled the developer to identify material that had potential for development in multimedia context that may have been overlooked by museum staff as their knowledge of multimedia was limited.

For instance, this simple line drawing had been discounted by museum staff as being of no value to the development. By chance the developers became aware of this and knew immediately that this resource was ripe for inclusion in the CD-ROM.

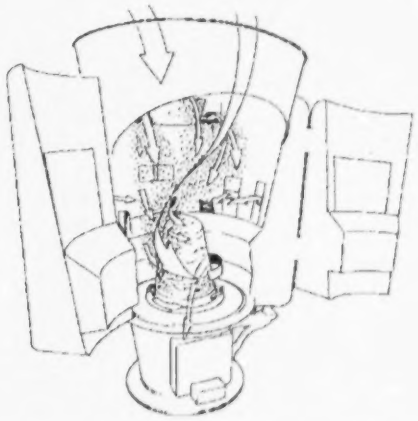

Figure 3. Technical drawing of fur-former

The developer's lack of specific knowledge was useful in this instance. Previous video selected for inclusion in the CD-ROM included footage of the process illustrated above. However the age and quality of the film reduced the clarity of the footage. The footage would have offered an incomplete view of the process to a layperson whereas a content specialist would tap in to their content knowledge to fill in the gaps. Our role as layperson allowed us to see through the eyes of the user. We therefore knew we had to provide a more comprehensive breakdown of the fur-forming process.

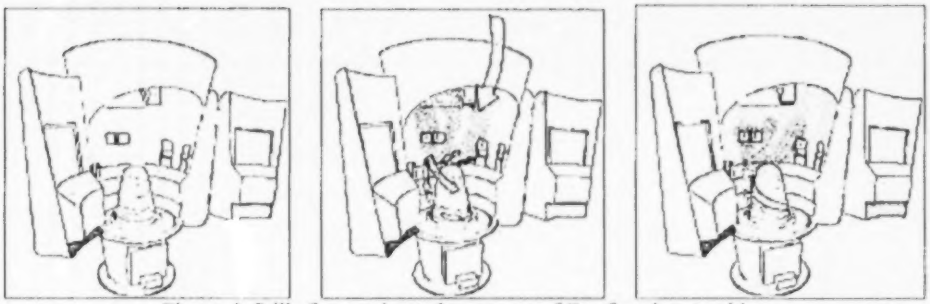

Figure 4. Stills from animated sequence of Fur-forming machine

This example shows the importance of collaboration between client and designer to exchange individual subject knowledge thus providing a richer more comprehensive set of content for the user. The ideal situation would be to work together in the same location to develop content. Ideas the designer has trigger 'hidden' information from the client and vice versa.

Visual and Interaction Design

The visual and interaction design is an expression of the information design. Once the metaphor had been developed a 2D representation of this was designed for screen use. All the elements from the metaphor had to be included: category, time, space and language. This enabled the content specialist to visualise the development and the way in which the content they were to provide would be accessed. This early treatment is flexible and evolves through consultation with the client. Our primary consideration was to create an environment where a diverse range of content could be presented with the focus upon the content rather than the interface. The generous use of space and muted colour scheme were intended to draw the user to the content.

Please visit http://www.icdc.org.uk to link to the project web site to view examples of the interface design.

The central element of the screen was devoted to content allowing us to use the top and bottom of the screen as areas for interface/navigation control. This wide screen layout gives an uncluttered and consistent feel to whatever content is presented. The interface design gives a crucial sense of orientation to the user. When the user selects a different area of content to visit the desired effect is that of the content coming to the user rather than vice versa. The user feels safe/comfortable and ensures the design meets their needs rather than the user fitting to the system's needs.
We build upon the sense of orientation by the use of perspective within the screen. Multimedia does not have to be a 2-dimensional form and the screen design used should express that. The distinction between the content itself and the icons used to control or navigate are clearly separated by the use of perspective. Incorporating perspective into the design was intended to aid the understanding of the content and acts as a visual representation of the layering of information.

The process of content editing and processing is time consuming and continues throughout the development period. As a result the developers aren't always aware of the nature of the content for inclusion. Therefore the interface had to be readily adaptable to new content to prevent costly redesigns every time new content was received. In addition, all content can be viewed in four languages. This has an immediate knock-on effect to screen design. A passage written in one language will not be the same size in another language. The flexibility of the interface was key. The use of layers of information allow the developers to build screens using a basic tool set without knowing the content in advance.

Types of Interaction

The interface has four types of interaction available - content navigation, interface control, context and the content itself.

Content Navigation

The means by which the user navigates through the content is crucial to their creation of a mental model of the content available. Successful navigation involves actively using the metaphor used by the developers to map the content. Time, space, category and language are all equally accessible from any point within the content. Changing any one will present the user with different content.

Interface Control

The user must be given support in using the developed product and have control over the underlying system.

Context

We anticipate that the environment created is easy to use and to explore. However we appreciate from are own experience that frustration can occur when the user feels confined to the metaphor in place. As the needs of the user are diverse we allow the user to step outside of the metaphor. Rather than following prescribed routes, users can jump to different points in the interactive environments according to their needs.
The researcher can search for a particular keyword and/or media type and move straight to that point rather than intuiting where certain content will occur within the model. Children will have access to interactive worksheets. Here users will be prompted to answer questions relating to the content in the CD-ROM. This is anticipated to be used by school children where use of the CD-ROM may need to be teacher guided. As the questions may be curriculum based the user will be guided to specific areas of content - again this allows immediate direction to content without explicit use of the metaphor. Not all activities will be curriculum based. Users will be able to reorganise content to meet their own needs by capturing media and storing it for their own purpose i.e. school projects.

Content

Within the framework supplied by the consistent interface rules there is room for flexible content. The interaction within each content area will be developed using the interface tool set developed.

Conclusion

This paper has sought to illustrate the methodology employed in a particular CD-ROM production and to indicate the value of that approach. At the time of this conference the production phase will be complete and the CD-ROM will be undergoing testing prior to release. The developers will be preparing to demonstrate this to the transnational partners and testing will begin. We will soon to discover whether the approach taken has been successful.

When the project began the content seemed extensive and complex. The development of a metaphor to understand the organisation of this information has been key. Though the scale and complexity of the information has not changed, the means by which we can understand it has. The metaphor began as a model for the developers to map the information to be addressed. It evolved into a means of navigation and a way of looking at content development.

Creating a set of parameters for the information to be incorporated into the production will, we anticipate, prove invaluable. Giving the user the opportunity to choose a context for the information they access, and to follow the links between strands of information, will improve their understanding and appreciation of the holistic nature of any body of knowledge. However, giving the opportunity for users to create their own paths, to step outside our rules and to create their own order will, we hope, prove equally invaluable.

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

☑ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").